Dam Removal in Michigan

Byron Lane, P.E., Chief
Dam Safety Program
Recreation
Hydropower
Industry
Water Supply
Michigan Dam Construction History

Number of Dams constructed

- 1820-1829: 4
- 1830-1839: 20
- 1840-1849: 23
- 1850-1859: 14
- 1860-1869: 9
- 1870-1879: 18
- 1880-1889: 27
- 1890-1899: 22
- 1900-1909: 65
- 1910-1919: 87
- 1920-1929: 102
- 1930-1939: 127
- 1940-1949: 111
- 1950-1959: 247
- 1960-1969: 492
- 1970-1979: 286
- 1980-1989: 113
- 1990-1999: 56

Legend:
- Number of Dams constructed
NOT MAKING THE GRADE.

The ASCEMI Report Card is an assessment by professional engineers of the state’s status in nine categories of infrastructure.

Michigan's infrastructure is in dire condition. Reversing the decay of our most valuable assets is essential to reviving Michigan’s fortunes. 
DOWNLOAD THE FULL REPORT

AVIATION
Michigan's 200+ airports generate $4.3 billion for Michigan's economy each year. The individual components - runway systems, pavement conditions, terminals, weather access, security and pilot and aircraft services - are in satisfactory condition. However, current infrastructure repair, maintenance and expansion needs exceed $1.3 billion over the next five years, a figure well beyond existing revenue. It is imperative that Michigan establish dedicated funding for airport infrastructure.

GRADE C

DAMS
Over 90% of Michigan's 2,581 dams will reach or exceed their design life by 2020. Many dams are abandoned, no longer serve any useful purpose, and pose safety hazards to downstream residents. No funding is currently available in Michigan to help dam owners repair, or remove aging dams.

GRADE D
Repair/Removal Costs

- Dam repair is often expensive.
- Financial assistance is rarely available for dam repair.
Below is a "close up" of the photo above, showing what many believe to be the likeness of Jimmy Hoffa appearing in the falls of the water. He appears to be a "crying out" to be freed from his watery tomb.

The City of Corunna has agreed to provide the FBI whatever assistance and cooperation is necessary. Although historic permission has been granted for the FBI to destroy the existing structure in their search efforts. The city has asked only that the FBI, at the completion of their search, construct a new dam on this same site. City officials estimate that this search can be performed for under two million dollars.
Repair/Removal Costs

• Dam repair is often relatively expensive.

• Financial assistance is rarely available for dam repair projects.

• Dam removal is often less expensive than dam repair and continued operation.

• Funding is often available to assist with river restoration projects.
Dam Impacts
Increase Water Temperature

Dams impact every aspect of healthy rivers (in impoundment and downstream):
- Habitat fragmentation (connectivity)
- Warming (water quality)
- Dissolved oxygen (water quality)
- Inundation of river habitat (complexity)
- Sediment starvation (complexity)
- Nutrients (water quality)
- Flow regime (water quantity)
Water Quality

- Nutrients accumulate in impoundments
- Respiration and decay of vegetation can result in dissolved oxygen declines
- Warming temperature in the summer – additional impact on DO
Dams fragment habitat for multiple species
Public Safety
Removed Dam (41)
Sturgeon River Dam, Dickinson Co.
Sturgeon River Dam, After
Chesaning Dam, Saginaw County
Stinking mud flats?
May 3, 2007

Mr. Steven Chester, Director
Michigan Department of Environmental Quality
P.O. Box 30473
Lansing, MI 48909-7973

Re: Emergency Draw Down of Boardman Pond and File #06-28-68-P for Permanent Draw Down

Dear Director Chester:

I am writing you today on behalf of all property owners and citizens of standing and interest on and around the Boardman Pond (also referred to as the Keystone Pond), which is the backwater of the Boardman Dam, on the Boardman River, just south of Traverse City, in Garfield and Blair Townships of Grand Traverse County. I will attempt to be brief and concise in my comments, so that you can have a grasp of the situation and that actions can be initiated to prevent further damage.

A brief history: On or about March 14, 2007, a leak was discovered in the Boardman Dam and an emergency declared, thus prompting Grand Traverse County and Traverse City Light and Power (TCLP) to initiate an immediate three (3) foot draw down of the Boardman Pond. As it turns out, this was nothing more than an old pipe, which
June 18, 2007

Jennifer M. Granholm
Governor of
The Great State of Michigan
&
Steven E. Chester
Director MDEQ

Dear Governor and Director Chester:

Subject: MDEQ file No. 06-28-0068-P  Boardman Dam Draw Down by Grand Traverse County and Traverse City Light and Power.

Today 4000 cars and trucks will cross the Dam at Cass & Keystone. No County Road Commission Engineers have declared the Structure unsafe. No Engineering Company has declared the Dam to be unsafe and in danger of collapse or failure. The Dam may have merely fallen out of specification and rule in the event of a 200 year flood event. The record clearly shows that the Dam is safe enough.

Concerned property owners have filed an administrative appeal through the Office of Administrative Hearing. Other property owners are attempting to file a temporary Court injunction to stop the draw down until the administrative appeal can be heard.

Administrative Law Judge Richard A. Patterson has recommended that the aggrieved Keystone pond property owners attempt to work informally with the MDEQ to identify and possible find solutions or resolution before continuing with a costly APA Hearing.

The property owners are requesting under authority granted to the State of Michigan in
STATE OF MICHIGAN
STATE OFFICE OF ADMINISTRATIVE HEARINGS AND RULES

In the matter of
Edwin Martel et al on the permit issued to Traverse City Light and Power

File No.: 06-28-0068-P
Part: 301, Inland Lakes and Streams
Agency: Department of Environmental Quality
Case Type: Land and Water Management Division

Issued and entered this 12th day of June, 2007
by Richard A. Patterson
Administrative Law Judge

NOTICE OF OPENING NEW FILE
6. A feasible and prudent alternative to the drawdown does not exist. MCL 324 30311(4)(b); 2000 MR 6, R 281 922(a).

7. The drawdown has not caused an unacceptable disruption to aquatic resources. MCL 324 30311(4)

**PROPOSAL FOR DECISION**

Based upon the Findings of Fact and Conclusions of Law, it is proposed the Final Order be entered allowing a permit as issued.

**EXCEPTIONS**

The parties have until **February 27, 2009**, to file written Exceptions to the PFD. Those filings shall comport with § 81 of the Administrative Procedures Act. MCL 24.281(1). Director Steven E. Chester will issue the Final Determination and Order in this case after the filing date. These filings shall be sent to: Richard A. Patterson, State Office of Administrative Hearings and Rules, Constitution Hall, South Tower Atrium, 525 West Allegan Street, P.O. Box 30473, Lansing, Michigan 48909-7973.

Dated: January 13, 2009

Richard A. Patterson
Administrative Law Judge
CONCLUSION

In light of the analysis set forth above, the Court affirms the ALJ’s decision.

ORDER

IT IS HEREBY ORDERED that the ALJ’s decision is AFFIRMED.

This order resolves the last pending claim and closes this case.

Dated: February 4, 2010

Hon. Paula J.M. Manderfield (P-34319)
Circuit Court Judge
Boardman River Dams: Episode 1

Drawdown and Devastation in Grand Traverse County

The latest Property Rights Network video relates the horrors experienced by property owners on the Boardman River outside Traverse City. Three of four dams on the river have been slated for removal. While removal of the dams may seem like a good idea, elected officials and bureaucrats are using every tool in their arsenal to usurp the rights of individuals who own land on the dam impoundments.
SAVE THE CORUNNA DAM !/? is on Facebook
Sign up for Facebook to connect with SAVE THE CORUNNA DAM !/?

SAVE THE CORUNNA DAM !/?

Basic Info
Name: SAVE THE CORUNNA DAM !/?
Category: Common Interest - Current Events
Description: What do you feel about a Corunna future with no Dam? The status quo has been upset... doing nothing appears to be a non-option. But what do we do? Stay tuned.
Privacy Type: Open: All content is public.

Contact Info
Location: Corunna, MI

Recent News
News:
The Michigan Department of Natural Resources and Environment has issued an order to draw-down and repair the dam. Easier said than done... The city is working with the state to address concerns that a draw-down may actually increase hazards, and to develop a long-term solution. Your opinions and ideas are valuable. Natural restoration, fish migration, recreational water, cost, grants available, rapids, water levels, flooding, safety, maintenance, history and aesthetics are just a few of the variables in making a good decision. Whatever happens, not everyone will like the outcome.

RSVP about your feelings on our options under the "Events" tab:
Attending = Like
Maybe Attending = Undecided
Not Attending = Dislike
You can change your preference at a future point if you desire.

Information
Category: Common Interest - Current Events
Description: What do you feel about a Corunna future with no Dam? The status quo has been upset... doing nothing appears to be a non-option. But what do we do? Stay tuned.
Save Argo Pond! is on Facebook
Sign up for Facebook to connect with Save Argo Pond!

Save Argo Pond!

Bob Roether  What's the next move politically?
December 20, 2009 at 7:54pm  Comment  Like  Report

S. Khoi Mong  The Ballad of Argo Dam | Pioneer Crew
www.pioneercrew.org
This is the ballad of Argo Dam we sure ought to keep it if we can! There it sits, as good as new built in 1972 by Joe O'Neal construction (thank you Joe... waita go!)
November 7, 2009 at 5:16am  Comment  Like

Kathryn Deering  Save Argo Pond signs
Where are people getting the Save Argo Pond signs to put out on their lawns?
August 27, 2009 at 11:33am  Participate

Joe Partington  I'm in! Save the pond!
July 28, 2009 at 8:41pm  Report
Supporters of keeping Argo Dam and Argo Pond, namely the rowing community, showed up en masse for tonight’s meeting.

Ryan J. Stanton | AnnArbor.com
Remove Argo Dam

Why remove Argo Dam?

It's better for the river


It's a great quality-of-life opportunity

30 acres of brand-new parkland in the heart of Ann Arbor. Beautiful natural rapids. Better canoeing, kayaking, fishing—even tubing! Revitalization of the northern

FAST FACT ABOUT THE HURON RIVER: Removal of the Argo Dam will result in a gain of 30 acres of parkland for the City of Ann Arbor (as well as the associated...
Potential Environmental and Resource Issues

- Sediment Quantity
- Sediment Quality
- Fish/Aquatics
- Channel Relocation
- Invasive Species

- Wetland Impacts
- Bridge Scour
- Flooding
- Endangered Species
Statutes Potentially Involved

• Part 31, Water Resources Protection (Floodplains and Water Quality)
• Part 111, Hazardous Waste Management
• Part 115, Solid Waste Management
• Part 201, Environmental Remediation
• Part 301, Inland Lakes and Streams
• Part 303, Wetlands Protection
• Part 315, Dam Safety
• Part 365, Endangered Species Protection
Organizations Potentially Involved

- DNRE Fisheries Division
- DNRE Land and Water Management Division (three program areas)
- DNRE Remediation and Redevelopment Division
- DNRE Waste and Hazardous Material Division
- DNRE Water Bureau
- Michigan Department of Transportation
Ownership Type

- Private, 61.5%
- DNR, 21.3%
- Local Gov't, 12.8%
- Fed, 4.43%
POLICIES AND MEASURES THAT CAN BE TAKEN TO ADDRESS DEGRADING DAMS IN MICHIGAN

May 11, 2004

Prepared by:
Byron P. Lane, P.E., Chief Dam Safety Program Geological and Land Management Division
Voluntary Dam Removal Pilot Project

May 12, 2004

Prepared by
Dam Safety Program
Water Management Section
Geological and Land Management Division
  Byron Lane, P.E., Chief
  James Pawloski, P.E.
  James Hayes, P.E.
  Paul Wessel, P.E.
"Another partial solution to the problem is to aid owners in their efforts to find private funding and to navigate the DEQ permitting process."
Overview

- History of Michigan's Dams
  Dams have been built and rebuilt across Michigan to meet a variety of needs that reflect the evolution of the state's economy and society over the decades.

- Dams in Michigan
  Maps of Michigan dams.

- Environmental Impacts of Dams
  Protection and restoration of river environments is essential for sustainable, diverse, and productive stream fisheries. Over the last two decades, fisheries managers and ecologists have explored the changes dams cause in the ecological processes of river environments.

- Regulation of Dams

Great Lakes, Great Times, Great Outdoors

- Dam Removal Guidelines for Owners PDF
  The purpose of this guidance document is to suggest issues that may need to be considered when deciding the future of a dam, and to assist in implementing a dam removal project.

- Dam Removal
  Most dams in Michigan were built decades ago and many have deteriorated due to age, erosion, poor maintenance, flood damage, and poor designs. Those dams that no longer make sense, that stand in disrepair, or are not removed are at significant risk of failure, particularly during high flow events.

Dams Removed in MI

- Big Rapids Dam
- Stronach Dam

Funding Sources

- Grant Sources
- Paying for Dam Removal PDF
American Rivers will soon release our new DVD "Restoring America's Rivers: Preparing for the Future."
By Stephanie Lindloff 6 hours ago
Add comment

Does anyone know if the Forest Lake dam in Arenac County (Alger area) is considered a high hazard dam?
By Roger Garner 14 days ago
Stop following | 3 comments

Dam bid awarded — at $160,000 under budget | SouthCoastToday.com
From: southcoasttoday.com | 14 views | March 29, 2010 | Follow discussion | Share | See 2 comments

The true fact is that Right now any one interested in any type of construction or demolition is faced with a fantastic opportunity. We are in one of the best BUYERS MARKETS in my lifetime and you...
Comment posted 1 day ago by Mike Sarrazin

Alpena National Fish and Wildlife Conservation Office - Dept of the Interior...
From: recovery.dolgov | 10 views | March 30, 2010 | Stop following | Share | See 2 comments

Teen drowns, another one injured when canoe swept over low-head dam
From: kansascity.com | 9 views | March 25, 2010 | Stop following | Share | Add comment
Announcements

**E-mail** - In an effort to reduce mailing and handling costs, and to improve our ability to quickly disseminate dam safety information to you, we ask that you provide us with the e-mail address for the primary contact person for the dam. This can be most easily done by sending an e-mail note to egejm@michigan.gov, providing the name of the primary contact and the ID number of the dam.

**Dam Removal** – The removal of unneeded dams is becoming increasingly popular around the country and around Michigan. Many of Michigan’s 2500 dams have outlived their usefulness and have become costly maintenance headaches for their owners. If you are interested in looking into the possibility of removing your dam, visit our website at www.michigan.gov/deqdamssafety or the Department of Natural Resources’ website at www.michigan.gov/dnrdams for helpful information on dam removal and a listing of possible funding sources.

Byron Lane, P.E., Chief
Dam Safety Program
Michigan Department of Environmental Quality
laneb@michigan.gov
517-241-9862
Succeeding with a Dam Removal Project

November 5-7, 2007
East Lansing, Michigan

Benefits for:
- Design engineers and planners
- Biologists
- Regulatory review professionals
- Dam owners
- Contractors/contracting service personnel
- Public sector professionals

- Identify key decision points
- Implement practical, efficient removal approaches
- Know how to maximize environmental endpoints
- Understand engineering, sediment management and water quality issues

By invitation of and in cooperation with:
American Rivers
Michigan Water Environment Association
Michigan Chapter of the American Fisheries Society
Michigan Association of Conservation Districts
Michigan Department of Environmental Quality
Michigan Council of Trout Unlimited
Dam Removal Application
Shepherdine Concept

- Dam Safety Program staff issues dam removal permit and coordinates permit processing.
Removed 2006
Village of Dexter
Washtenaw County, 2008
Village of Dexter Dam Removal Project

1. Consultant for owner contacted DEQ and asked for project input – 8/06
2. DEQ and DNR staff met with owner and consultant’s staff at dam site – 8/06
## Mill Creek Dam Removal Project

**Permitting Requirements Meeting: 8/24/06**

### Attendees

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Village of Dexter Dam Removal Project

1. Consultant for owner contacted DEQ and asked for project input – 8/06
2. DEQ and DNR staff met with owner and consultant’s staff at dam site – 8/06
3. DEQ staff worked with owner & consultant to address sediment, floodplain and other issues 2006 - 07.
4. Permit application submitted – 10/07
5. Public hearing - 1/08
6. Permit issued - 2/08
Village of Dexter Dam Removal Project

1. Consultant for owner contacted DEQ and asked for project input – 8/06
2. DEQ and DNR staff met with owner and consultant’s staff at dam site – 8/06
3. DEQ WB, RRD & LWMD worked with owner & consultant to address sediment and other issues 2006 - 07.
4. Permit application submitted – 10/07
5. Public hearing - 1/08
6. Permit issued - 2/08
7. Project issues addressed by appropriate team members as they arose.
8. Dam removed - 2008
Dexter Dam - After
Others

- Buckies Pond Dam, Luce Co. – 2008
- Chesaning Dam, Saginaw Co. - 2009
- Rice Creek Dam, Calhoun Co. - 2009
- Nashville Dam, Barry County - 2009
Dam Removal Team Concept

- Dam Safety Program staff issues dam removal permit and coordinates permit processing.
- Appropriate staff meet with owner early in the design process.
- Establishment of an informal dam removal core team with representatives of each organization.
- Team members are consulted when questions arise related to a dam removal project.
Future

• Creation of a formal standing dam removal team.
Questions?